

20. The method of claim 18 wherein each of said at least one hundred hard disc drive components with a phase change material thereon has a first order frequency that is within about thirty Hertz of said median first order frequency.

21. The method of claim 1 wherein the resonance spectra of said plurality of hard disc drive components with phase change material thereon have a standard deviation of first order resonance frequency that is at least about twenty five percent less than the standard deviation of the first order resonance frequency for the same number of the same components over-molded with an injection molding process wherein only the injection pressure and either the injection time or stroke of an extrusion screw are controlled.

22. The method of claim 1 wherein the resonance spectra of said plurality of hard disc drive components with phase change material thereon have a standard deviation of first order resonance frequency that is at least about fifty percent less than the standard deviation of the first order resonance frequency for the same number of the same components over-molded with an injection molding process wherein only the injection pressure and either the injection time or stroke of an extrusion screw are controlled.

23. The method of claim 1 wherein said one of said plurality of hard disc drive components is placed in a mold with one or more additional components used in a single hard disc drive and a layer of phase change material is injection molded thereon.

24. The method of claim 23 wherein said one or more hard disc drive components are substantially encapsulated with said phase change material.

25. The method of claim 24 wherein said one of said plurality and said one or more additional hard disc drive components are unitized by a monolithic body of said phase change material.

26. The method of claim 1 wherein the phase change material comprises a thermoplastic material or a thermosetting material.

27. The method of claim 1 wherein the phase change material includes ceramic particles.

28. The method of claim 1 wherein the phase change material has a coefficient of linear thermal expansion of less than  $2 \times 10^{-5}$  in/in/ $^{\circ}$ F throughout the range of  $0^{\circ}$ F to  $250^{\circ}$ F.

29. The method of claim 1 wherein the phase change material has a coefficient of linear thermal expansion in the X, Y and Z directions, wherein the coefficient of linear thermal expansion is lowest in the X direction, and wherein the coefficient of linear thermal expansion in the Y and Z directions is no more than four times the coefficient of linear thermal expansion in the X direction.

30. The method of claim 1 wherein the injection molding machine comprises a multi-cavity mold machine.

31. The method of claim 25 wherein the density of the monolithic body is substantially uniform.

32. A hard disc drive component made by the method of claim 1.

33. An electronic device comprising the hard disc drive component of claim 32.

34. A method of manufacturing hard disc drives having a reproducible

resonance spectrum comprising:

a) providing a plurality of identical hard disc drive component sets, wherein each of said sets consists of components that are used in a single hard disc drive;

b) placing and positioning one of said plurality of hard disc drive component sets in a mold cavity of an injection molding machine;

c) closing said mold cavity;

d) monitoring the pressure inside the mold cavity at an end-of-fill point;

e) injecting a molten phase change material into said mold cavity to a pre-determined set point pressure; and

f) repeating steps b)-e) to produce a plurality of hard disc drives each having a substantially uniform resonance spectrum.

35. The method of claim 34 wherein after said injecting of molten phase change material, said molten phase change material is held in said mold cavity until said material cools and solidifies into a monolithic body.

36. The method of claim 34 wherein a controller starts and stops flow of the molten phase change material into said cavity by opening and closing a valve gate associated with said cavity.

37. The method of claim 34 wherein the pressure at the end-of-fill point inside the mold cavity is measured by a pressure transducer associated with said end-of-fill point.

38. The method of claim 34 wherein a pressure transducer is also